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Bees and Honey in Utah—Alfalfa.

BY E. S. LOVESY.

THE honey crop here for last season may be considered closed up, and while the figures in the early part of the season were not very high, the demand has been good—in fact, it has been impossible to supply the demand. I do not think there is 500 pounds of comb honey left in the State.

Our State as a honey-producer has been pretty well advertised of late, and consumers and dealers are beginning to find out that Utah alfalfa and white clover honeys are par excellence. Of course, success in obtaining a yield of honey in paying quantities is largely a matter of conditions; it sometimes happens that if one or more bee-keepers by proper management make a success, others think it is an easy way to make money, and they rush so many bees into the neighborhood as to swamp the whole business. By all means this should be avoided. While I might name several instances of the kind here, I will point only to one.

In 1897 one bee-keeper reported a yield of over 300 pounds per colony, spring count; but last season so many bees were brought into the locality that his surplus was reduced to less than 50 pounds, while a number of the new colonies brought in came out in the fall with several pounds less than nothing; that is, there were less bees and honey than they had in the spring.

One thing that some bee-keepers don't seem to realize is, that if their bees are not strong enough to rush forward they often dwindle just as fast backward. But this is not written with any intention to discourage anybody, but rather with a view to advise our bee-keepers to use wisdom in selecting a location for an apiary. If they do this it may prove a benefit to themselves without injuring their fellow bee-keepers.

We had a somewhat peculiar season here the past year. It was short at both ends. In some portions of the State the spring was cold and backward; thus the bees failed to build up as early as usual, but when it did clear up it did so for good, and the flow from alfalfa—our main honey-plant—where there was plenty of irrigation water, was all right; and while some very poor yields were reported, some large yields were also noted, the largest being 10,800 pounds from 31 colonies, spring count, and an increase to 82 colonies. This, of course, is an unusual report, but all in all I believe the bee-industry is in as flourishing a condition as any of the other industries of the State; and if the bee-keepers were only united, and would pull together for their own interest, they would accomplish better results.

We have perhaps one of the best laws in existence for the protection of our bees, and while the law has been en-

forced in many of the counties for the benefit of the industry, still there has been some trouble and considerable loss in a few localities thru a lack of interest on the part of the bee-keepers to get it enforced. But we find that instances of this kind have been an incentive to arouse the bee-keepers to action. It is hoped that our bee-keepers will interest themselves not only in this matter, but also in the purchasing of supplies and in the disposal of their products.



ALFALFA GROWING IN UTAH.

I have received several letters of inquiry in regard to alfalfa, but I do not think that an extended article on it is necessary at this time, as it has been pretty thoroly written up in the American Bee Journal; therefore I would say for

the information of those wishing to try this plant, that it should be sown as early in the spring as possible, so that it may receive the benefit of the spring rains. It is sometimes sown alone here, and sometimes with grain crops; in the latter case I would sow about 23 or 24 pounds of seed to the acre, but if sown alone about 18 or 20 pounds is enough. Where it will produce honey, as a rule, it will be of a superior quality, and while as a rule we regard it as our best honey-plant, in a rainy climate it cannot be relied upon as a honey-plant at all, because, like sweet clover and some other plants, the rain washes the nectar out of the blossoms. But we believe that any place where it will grow it is one of the best forage plants known, and it will produce the most to the acre.

Of all Utah crops, alfalfa (or lucern, as it is called here), we think, is the "boss." Good land will produce about seven tons to the acre, and I know of land where over 200 tons from the acre have been cut since it was first planted, about 30 years ago. Almost any animal that can be named will live and thrive on it, either in its green or dry state, and all stock will eat it in preference to any other hay. I have just been buying a lot of honey-jars packed in clean meadow hay from Illinois, which I tried to save by feeding, but after starving the horses for 36 hours they would not touch it. I then mixt lucern with it, and they pickt out every spear, but left the Illinois grass.

WINTERING BEES IN UTAH.

As a rule, the principal cause of winter loss among the bees in this part of the country is a lack of ventilation. Our bee-keepers, in their anxiety to protect their bees from the cold weather, cover them up and make them so nearly airtight that it causes the bees to sweat. Then the little air they may have in the hive, when the temperature drops low, becomes foul, which causes the bees to become so weak that they cannot leave the cluster to seek their stores, and thus they hang in the cluster until they starve; when the bee-keeper opens his hives he finds the frames damp and moldy, and his bees dead. I could give over a hundred illustrations to prove this.

Packing is all right if the bees are kept dry. Remember, they must be kept dry. Bees don't often freeze, but they can be easily smothered, and starve. Thus it would be preferable to prop up one end of the cover rather than to seal them down airtight.

I believe there was four times the amount of snow in Salt Lake county the past winter as in the previous one. Many of the tall pines in the canyons of the Wasatch Mountains were covered out of sight; there were many slides with some fatal results, and while a few of our stockmen felt a little blue, the farmers and bee-keepers felt jubilant, as it insured an abundance of water for irrigation, and a good flow of honey. Salt Lake Co., Utah.

Observations on the Subject of Honey-Dew.

BY WM. M. WHITNEY.

PROF. A. J. COOK, in his article on page 17, under the head of "Honey-Dew—Its Origin and Uses," asks the readers of the American Bee Journal to observe closely this honey-dew, and report the result of their observations.

It has been my habit to observe somewhat closely the production of honey-dew for years, before becoming interested in bees. But I have never known an instance of its production that has not been the result of insect life. I am not sufficiently versed in entomology to be able to definitely classify the different species which produce this kind of honey; but from my observation during last summer, I concluded there were in this vicinity at least two classes or species of aphides at work. To make myself understood clearly, I will be compelled to give a history of my operations in this direction.

The early spring bid fair for a successful season, and on May 13 I put extracting-supers on several hives, and section-cases on others, but soon the conditions changed to such a degree that for some time little was done except to build up strong colonies, which fact I discovered by frequent examinations. This condition continued thru the early white clover and the basswood season, and except for the hope of a supply from sweet clover, our fond anticipations had vanished; but on July 27th, after a respite of ten days, I made another examination, and, to my surprise, I found several of the section-cases partly filled, and quite a number of supers nearly full of honey. The most of it, however, was the vilest looking stuff one ever saw. Lubri-

cating oil used on shafting, until the iron has been ground into it, so as to produce a muddy black, comes the nearest to describing it of anything I can think of, but scarcely any of it was in the brood-chambers, for they were almost wholly occupied with brood.

In searching for the cause, I went into the cherry orchard of 1,000 trees, or more—the nearest point being not more than 20 rods from my bees—and found all thru the orchard, on the under side of the leaves, a black insect, or plant-louse, and the upper side of the leaves was covered with a sticky substance, which the bees were vigorously gathering. This I thought would account for the very dark honey, but there was yet an unsolved problem; there was more light-colored honey than could be accounted for from basswood and clover, for these sources were nearly a total failure. On looking over the lawn of some 30 or more acres, a large number of box-elders were found, on the under side of the leaves of which were found a light green aphid almost transparent, and apparently much larger than those on the cherry-trees, and the upper side seemed to be more completely covered with honey-dew than were the cherry-tree leaves, and the bees were working it as vigorously as I ever saw them on basswood when in full bloom.

Since reading Prof. Cook's article I am more convinced of the source of the light honey than before. The dark honey was all extracted, but what to do with it was the puzzle. But late in the fall the idea of vinegar crost my dull perceptions, and immediately a warm liquid, that was strong enough to bear up an egg, was made by stirring into warm water honey enough to produce the result. So now I have about 80 gallons of very strong vinegar, which may be increased to 100.

One of the most striking objects to arrest my attention on making the examination for honey-dew was the difference that existed between the honey in two hives standing near each other. Supers were put on both at the same time, but one contained honey-dew almost as black as tar, while the other contained not a cell of such honey, but the contents was as clear and light-colored as any clover honey I ever saw. Query—Do individual colonies of an apiary have fields to which all the bees of the hive direct their attention, instead of scattering promiscuously over the whole territory? This discovery seemed to indicate such as a fact; at least it must have been so in this instance.

Kankakee Co., Ill.



Planting Fruit-Trees and Bushes for Honey.

BY F. A. SNELL.

THE opening of plum-tree bloom follows closely upon that of the cherry, and is rich in both honey and pollen.

During fine weather the honey-bees fairly swarm in the trees, proving that a rich harvest is there in store. The air is made fragrant for quite a distance by the sweet perfume floating in the atmosphere. During a profusion of plum bloom no prettier scene can be witnessed than to behold these trees in their snowy whiteness. The bees secure a fine harvest from this bloom to encourage and produce brood-rearing which at this season is so desirable by all apiarists.

Several plum-trees of the different hardy varieties should be grown by every bee-keeper even if the amount of land at hand consists of only a few town lots. Fruit-trees make a good and profitable shade. With the planting of hardy varieties of plums to the number of 25 to 50 trees on every farm, an increase of honey will be secured by our bees, and a profitable crop of fruit secured for family use and to sell. Good cherries as well as plums are in good demand each season and at good prices. If one will give the proper attention I doubt if any crop on the farm will pay as good a return as will an acre or two devoted to cherry and plum culture. The bee-keepers at least should do something in this direction, and may rest assured that a good reward will follow the effort so wisely made.

Apple-trees, peach and pear trees follow in opening of early bloom, or that coming before the small fruits. The apple is here grown to some extent, but not so much as it should be. A good many farmers have bought of unreliable agents, and also trees grown in milder climates than we have, and the trees have often proved not true to name, or tender so they soon die in our colder climate. This has discouraged a good many, and not near the planting has been done that would have been had earlier purchases given good results.

I have great faith in our climate for apples and much other fruit, if hardy, reliable trees are grown or planted.

The planting should consist of trees that have proved hardy in our home or Northern nurseries, buying only of those whom we know to be men of honor. With this rule followed, and good care given, we may grow the delicious apples instead of sending our money to distant States for them and paying freight, and the middlemen their profit besides. Who can estimate the benefit that would result to the bee-keeping industry of our country, and in the better health and wealth of our people?

In the planting of an apple orchard it should be made a point to have a succession of fruit for family use from July 1st to the following April, which is easily secured by the proper selection of a few of each of the varieties to secure the desired end. Four to six trees of each variety will do for an ordinary family.

It must at all times be remembered that bees and fruit go well together, and that while the fruit-bloom is of much value to the bees and their keeper, the bees are also almost indispensable to the fruit-grower, and are his best friends, and aid in securing a good fruit harvest.

Peaches, pears and apricots have been planted here only on a very small scale the past few years, but the first two named have given the past three years good crops, the trees being loaded. Apricots are, so far as I know, too young yet to bear, so it is not known what the result from these trees will be.

Gooseberries, currants, raspberries and blackberries are here grown to some extent, and are of benefit to our bees. The two latter coming in bloom after the fruit-trees are out, help to fill the interim between fruit-tree and clover bloom.

With anything of a favorable spring, with our bees, well wintered, and the planting of fruit-trees and small fruits named above, our hives should be crowded with bees, and some surplus stored when combs are furnished before the close of the fruit-blooming period, and on the opening of clover bloom our bees should be so numerous that each colony would promptly begin work in the supers. As it now is, only a part of our colonies are strong enough to do this at that time, and clover bloom may be in ten days or more before all our bees are storing in the supers.

Fruit-bloom is well known to be an important factor in the securing of a crop of surplus honey. To secure the desired results bee-keepers must do more planting of honey-producing trees and bushes, and encourage others to do so, and they will at the same time reap a double harvest—that of honey and fruit—than which no more healthful products can be named for man's use.

The honey-bees, in visiting blossoms of any kind in search of honey, carry pollen from blossom to blossom, and thus fertilize them and add to the fruit or grain so visited. This fact has been established beyond all doubt. This is of untold benefit to farmers and fruit-growers.

Carroll Co., Ill.



An Explanation of Foul Brood and Its Cure.

BY PROF. A. J. COOK.

I AM asked by one of our intelligent bee-keepers to explain foul brood, and to state whether all microbes are harmful. I am glad to give a brief chapter on these inconspicuous but very significant organisms, from the fact that I have had numerous inquiries of late on this very subject.

Bacteria or microbes, also spoken of frequently as germs, are very minute, so minute that were man magnified as we must magnify these Lilliputian organisms to study them at all, he would appear as large as Mount Washington. They are one-celled plants, and so are of the vegetable world. Some are spherical, others rod-shaped, and still others are spiral. They are classified from these three characteristic forms. The matter of form, however, is not so important really as their physiology or the work they do. As the rod form may merge into the spiral, the microbes reproduce in two ways. They may simply divide—one becoming two or more; or spores, or minute germs may develop, and burst forth and develop into the specific microbes like that which produced them. Not all microbes are harmful. Some are helpful in removing dead matter. We now know that all decay is the result of microbe growth. We see, then, that except for these bacteria of decomposition the earth would soon be clogged by its own dead organisms. Some microbes work on the roots of legumes, like peas, beans, etc., cause tubercles or wart-like excrescences, and in their development breathe in the inert nitrogen of the air and combine it into available form for plant use. They are

thus the cheap, rapid producers of our most valuable or expensive fertilizer—nitrogen, in available form for plant growth.

Other bacteria enter into the development of cream so as to give flavor to butter, and still others add their gifts in the processes of cheese-making so that many of the most valuable cheeses owe their superior excellence either to products arising from the microbes, or to the microbes themselves.

The microbe of foul brood belongs to the rod-like forms, and is one of the forms that develops in living organisms, and breeds decay. Thus these bacilli kill the organism which they attack, and death is followed with decomposition, which is peculiar in color, character and odor. The color is brown, much like that of coffee; the consistency is sticky, stringy, and the thread formed in pulling it out is elastic, so that as it lets go the pinhead which draws it forth from the cell of comb, it flies back. The odor is very penetrating, and has been likened to that of old glue. These microbes seem to work on the tissues, and cause their disorganization. Other bacteria are supposed to generate poisons which tend to destroy the life of their victims. The microbes of diphtheria are of this kind. This is why the substances which are injected to destroy these poisons are termed antitoxins.

The dead larva or brood, victimized by the foul brood bacillus, after decay commences loses all semblance of its former self, and finally dries up and settles to the bottom rear end of the cell a dry scale, but supposed to have the germs of the trouble, so that it will ever be a menace until it is destroyed. As is well known, the cell cap sinks, is often perforated, and the dead brood with these signs in the cappings, the odor, and, best of all, the brown, ropy, elastic matter in the cell, are the best signs that the fatal malady is present.

Every bee-keeper should know these signs, for, unless he does, he may scatter the combs of dead brood, and so spread the disease very rapidly thru his apiary.

The idea of curing foul brood by use of salicylic acid, or phenol, is now entirely given up. These substances were never satisfactory, as they were very uncertain. Many careful apiarists secured no good at all by their use. To put the bees in a new hive on foundation, let them remain four or five days, gathering from the field or being fed as circumstances demand, then melting up these as well as the other combs, after extracting the honey, and living again on foundation, we entirely eradicate the disease. We have destroyed all the germs. The one danger is in scattering the honey as we manipulate the bees and combs. We must know that this honey has the germs of death in it, and so must be most cautious not to give any chance that any bees can ever get any of it until it is scalded. We must scald out the extractor after use.

Mr. McEvoy, of Ontario, says there is no danger of using the hive again, with no pains to scald it out. As he has had a very wide experience, treating thousands of colonies, he is certainly good authority.

Los Angeles Co., Calif.



One-Piece vs. Nailed Sections—A Foul Brood Inspector's Experience.

BY F. BOOMHOWER.

ON page 154, in "Beedom Boiled Down," it is reported that Mr. Doolittle says in the Progressive Bee-Keeper that he considers the nailed sections the best, as they will stand shipping better, and are not so apt to break down.

Now, I have never known any section, whether nailed or otherwise, to break down in a shipment. I have in the last 20 years handled and shipped upwards of 75 tons of comb honey, both by rail and water, and some by rail that went long distances, and I have never yet had a box to break, neither have I had a shipping-case to break, and I make the cases very light at that. Our cases hold 24 sections, and are made of basswood, weighing only 2½ pounds. I think it a waste of lumber and a useless expense to make boxes and crates of such heavy material. The ends of our cases are scant ½ inch thick, and generally the bottom and top are 3/16.

To nail sections is like going back to the old scythe and snath to cut grass. I would like to see Mr. Doolittle sit down with a job of 30,000 or 40,000 sections to nail. A dovetailed section can be put together before Doolittle or any one else can pick up and drive one nail. And if the dovetailed joint is glued—which we always do—a dovetailed sec-

tion is stronger, and will stand more banging than any nailed section I ever saw, and I used to nail a good many. I have seen a case of honey drop over 10 feet to the ground, with dovetailed sections, but not a box was broken; of course the honey was masht.

A LAUGHABLE EXPERIENCE IN FOUL BROOD INSPECTION.

I would like to relate a laughable experience that I had last fall while I was inspecting bees for foul brood.

I was notified one day to examine some bees about 10 miles from home. After some inquiries, and traveling over a very crooked road, opening at least a half-dozen pairs of bars, I found the place, and walkt up to the door. I rapt gently, and a large, portly woman with sandy hair and an extremely large mouth responded to my rap. I lifted my hat, and in as gentlemanly a way as possible bade her good afternoon. I askt her if her husband, Mr. H., was at home. Drawing her mouth to one side, the corner of which extended nearly to her left ear, and cocking her head to one side as far as her shoulder would permit, she replied:

"Y-e-s, he is over on the hill raking up buckwheat, a half mile or more away. *What dew yew want* to see my husband for? At this outburst, and the important way with which she brought it out, I made up my mind I had struck a snag, and it would be policy for me to proceed very carefully, for I had had some experience before, and something seemed to whisper in my ear, "Look out, old fellow, there is trouble ahead."

I smilingly and very genteelly replied that I had been informed that they had some bees that were diseased with foul brood, and that I had—but before I could finish my answer she strode up to within about two feet of me, and again cocking her head to one side, and putting both hands upon her hips, extending her mouth this time until the corner was so far around as to be invisible, she said:

"*A-r-e y-e-w* the chap what's around burning up foaxe-s b-e-e-s?"

Cautiously and carefully taking a step or two backward, and slyly glancing my eye over my shoulder to measure the distance to where my horse stood, in case of emergency, I replied that I had come to examine their bees, and if they were badly diseased, and no hope of saving them, I was there to see that they were properly taken care of. Again she came up toward me, and lifting that long arm with indignation and scorn written on her face, with her front finger she pointed towards the lane whence I had come, and roared out:

"N-o-w y-e-w g-e-t! If you don't I'll scald your eyes with hot water!" At this she made a dive for the kitchen, but as good luck would have it the fire was out, and I could hear her upbraiding one of her girls for being so shiftless as to let the fire go out, and not a drop of hot water in the teakettle.

"Oh," she said, "if I only had some hot water," coming back again to where I stood. Oh, I shall never forget the look that creature gave me, as then she bolted around the house out of sight, and at once began yelling to her husband to come to the house quick, for the man was there to burn up the bees. Oh, what a pair of lungs that woman did have. I thought to myself, when I heard that voice, if every one had such lungs we would not have any use for short-distance telephones. She made the hills and valleys ring, and as it echoed back and forth it reminded me of the old, long tin-horn that my grandmother use to blow to call the men together in anti-rent times, when the sheriff was coming. If all women had such a voice the tin peddlers would have no traffic in dinner-horns. I thought about A. I. Root, where he tells of getting his second wind while riding his wheel; if he only had half of the wind that woman had, he would not have to wait until he got his second wind.

After giving vent to those lungs, she rusht back to where I was standing, and if ever a man got a dressing down it was myself. Vainly I tried to reason and explain to the woman, but it was of no avail—her tongue was loose at both ends and hung on a double swivel with ball-bearings, well oiled, and it would have to be an expert at shorthand to have kept track with one-half of what she said.

Finally her husband appeared around the corner, and after introducing myself and explaining to him the object of my visit the best I could under the circumstances, we proceeded to examine the bees, after he had partly quieted her down and told her to shut up, and not to make a fool of herself.

I got a hive open, and to my great joy I found that they were about the crossdest bees I had ever come in contact with, as she stood there with an old mopstick, flourishing it at me. I had fully made up my mind if she made a charge

at me I would arouse the bees in my defense, and drive her from the field. I bumpt the hive and shook the bees, and even crusht a few so as to arouse their ire. It was but a moment before I was master of the field. Her husband made a dive and shot into an old pigpen with a lot of fighting bees in hot pursuit; and, glancing over my shoulder, I saw a sight I never shall forget, and often in my sleep I have dreamed about it, upon awakening I have laught out loud, and my dear wife has often told me that she believed I had the nightmare, but it was no such thing. It was only a vision of a 200-pound, red-haired, sandy-complexioned woman, with powerful lungs, a calico apron over her head, stamping and jumping with a few bees twisted up in her golden locks, with a mop in one hand, trying to get thru an old woodhouse, and calling to her daughter to come and pull a stinger out of her nose.

I proceeded to examine the rest of the bees in peace, and when once in awhile I would quickly glance up toward the house I could see the old woman peeking out of one window, and the husband and a couple of red-headed girls looking out of the other.

I found the bees rotten with foul brood, and rotten broody combs strewn around the yard from colonies that had succumbed to the disease long before.

Finally, before I left, the husband came out, and then I told him that he seemed to be a quiet sort of a man, with considerable sense, and that I did not believe there was a law in New York State that would compel a man to live with such a woman as he had. He replied that he had become used to it, and one must not pay attention to all that women said.

Schoharie Co., N. Y.



Is Pollen Fed to Larval Bees?—If so, in What Form?

BY G. M. DOOLITTLE.

A LETTER lies before me in which I find the following: "Do larval bees, at any stage of their existence as larvæ, eat pollen, or is their food of some other material? I see it is claimed by some that the young bee in the larval state does not eat pollen, but its food consists of a purely animal secretion. Please tell us thru the columns of the American Bee Journal what you think regarding this."

I am not informed in these matters to an extent sufficient to be considered an authority on this subject, therefore I am very glad to know that my "think" is what is wanted of me, rather than what I *know*. However, I am glad this question has been brought up, for it will be one of interest to most of us, and it will be a good time during the summer months to interrogate the nurse-bees, and perhaps while they are liberally feeding the larvæ they will tell us just what it is they are feeding them.

From many careful observations during the past, regarding the food of larval bees, I have been led to believe that such food is composed of about two parts honey or saccharine matter, four parts pollen or flour (where the latter is used in early spring as a substitute for the former), and one part water, the whole being taken into the stomach of the nurse-bee and formed into chyme, after which it is given to the larval bees in the cream-like form we see it surrounding the larvæ in the cells.

Right here I wish to digress a little and give some other observations as bearing on the eating of pollen by the old or hatcht bees. The older readers of the American Bee Journal will remember that some ten or more years ago I told how I starved some colonies entirely, and others partially so, trying to make them eat pollen in the fall, and at other times when there was no brood in the hive; and that, so far as I could see, not a cell of pollen was toucht. At another time some of the colonies had to be fed, when I again tried an experiment which I had formerly tried several times, which was to see if the bees in hives which had scarcely a cell of honey in them, but plenty of brood in all stages, would live, if provided with pollen.

As the weather at the time of this latter experiment was so bad that the bees did not fly for several days, it was with much anxiety that I waited to see what would be the outcome of the matter after the honey was gone. The first thing noted was that, as soon as the few cells of honey were gone, the larvæ was scrimp for food, and the eggs removed from the cells, or more probably eaten by the bees, while a little later there was a general eating of the larvæ. A day or two later the sealed brood was taken from the cells and suckt dry, while the harder parts were scattered about the entrance and bottom-board of the hive. At this time I no-

ticed the bees putting their tongues together as they do when bees feed the queen, this thing being continued till nearly all the pollen was used up, which lasted for several days, when it came good weather again, so new supplies were gathered.

From these observations I formed the opinion that old bees partake of pollen only in the form of chyme, and that this chyme is prepared only when there is, or has been, brood lately in the hive. I have thus wandered to show that pollen can become a factor in our problem of wintering of bees, *only in connection with brood-rearing*, and that, where no brood-rearing is carried on, pollen can have nothing to do with the so-called disease—bee-diarrhea; and the result of the past winter, during which many colonies have had the diarrhea, only add strength to former opinions. But to return.

That the larval bee subsists wholly on this chyme, or creamy food, I think no one will deny; and if from my observations I am correct, the largest element in this food is pollen. As the larva absorbs this food the grosser part of the pollen forms itself into the yellow streak seen in the larva when taken out of the comb, but most plainly in the drone-larva, which streak is finally enclosed by the intestines of the newly-hatched bee, and evacuated on its first flight.

If I had time it might be interesting to digress here again, and tell how I have found, by experimenting, that newly-hatched bees which have not had a cleansing flight are practically worthless to ship with queens long distances, and that I always avoid, as far as may be, catching such bees when sending queens to Australia and other distant countries, because they are liable to daub the queen and cages with their excrement, or die from over-distended abdomens; but I will not take the time here. To show that I am not alone in the belief that larval bees eat pollen, I wish to give the testimony of others who incline to a like belief:

A. I. Root says: "It is supposed that this larval food is pollen and honey, partially digested by the 'nursing bees.' Bees of this age, or a little older, supply the royal jelly for the queen-cells, which is the same, I think, as the food given to very small larva. Just before the larva of the worker bees and drones are sealed up, they are fed on a coarser and less perfectly digested mixture of honey and pollen."

Prof. Cook says: "The food is composed of pollen, for, as I have repeatedly proved, without pollen no brood will be reared."

Quinby says: "How this food is prepared is mere conjecture. The supposition is, that it is chiefly composed of pollen; this is strongly indicated by the quantity which accumulates in colonies that lose their queens and rear no brood."

Gallup says: "Every bee-keeper ought to know that bees do not feed pollen directly to their young, but it is elaborated in the stomach of the bee into chyme to feed the young on."

Kirby says: "With this pollen, after it has undergone a conversion into a sort of whitish jelly by being received into the bees stomach where it is probably mixt with honey and regurgitated, the young brood, immediately upon their exclusion, and until their change into nymphs, are diligently fed by other bees, which anxiously attend upon them, and several times a day afford a fresh supply."

Neighbour says: "A portion of this pollen is taken at once by the nursing bees, which are supposed to subject it to some change before offering it to the larva."

Gundelach says: "The larva are immediately fed by the worker-bees, with a pellucid jelly prepared in their 'chyle stomachs' by the digestion of honey and pollen mixt with water."

In the above I have told what I think in the matter, and given the "think" of several others, who very nearly, if not quite, agree with me; and I should be very much pleased to hear from any who do not agree. Let us all try to see if we cannot arrive as nearly at the truth in this matter as possible during the coming season's work with the bees.

Onondaga Co., N. Y.

Langstroth on the Honey-Bee, revised by the Dadants, is a standard, reliable and thoroughly complete work on bee-culture. It contains 520 pages, and is bound elegantly. Every reader of the American Bee Journal should have a copy of this book, as it answers hundreds of questions that arise about bees. We mail it for \$1.25, or club it with the Bee Journal for a year—both for only \$2.00.

CONVENTION PROCEEDINGS

Report of Wisconsin Bee-Keepers' Convention.

The 15th annual meeting of the Wisconsin State Bee-Keepers' Association was called to order by Pres. F. Wilcox, Feb. 9, 1899, in the Lieutenant Governor's office at Madison.

The secretary's and treasurer's reports were read and approved.

H. Lathrop, as committee to secure freight rates on bees in less than car-lots, reported that after several efforts no rates could be secured. Mr. Johnson spoke of taking a sample hive to the general express office in Chicago, and getting a special rate to ship bees by express as cheap as by freight.

The members then listened to a paper by John Trimberger, of Clark Co., on

What to Do with Unfinisht Sections.

By way of introduction, and to emphasize what comes after, I will say that I have been in the bee-business 20 years. For five years I kept bees for pleasure and experimental purposes in all kinds of hives then known. In 1884 I had the good fortune to change to the 8-frame Grimm-Langstroth hive and the Heddon super; and have in use nothing else to-day except three of the New Champion chaff-hives. Last and most important I have used nothing but the 7-to-the-foot open-top section.

Your worthy secretary struck me right when he wanted a short paper on the above topic by a practical bee-keeper. I accepted because I hold myself to be immensely practical. For instance, I have never been fooled with reversible frames. Neither did I ever fool with no-bee-entrance or plain or tall sections, or fence separators; nor have I been fool enough to break up or smash unfinished sections.

There was a time when bee-keepers almost unanimously advised to save unfinished sections for next year's crop, as they were worth their weight in gold. That was good. Then came a time, and it is on yet, when too many bee-keepers advocated and still hold to the absurdity of extracting the honey from unfinished sections; cut out the comb and break up the section lest you should be tempted to use them next season and spoil the whole comb-honey business. That was and is very bad! Only the loquacious paid writer or the manufacturers of sections and comb foundation could advise such a detrimental course.

You are already aware that I do not hold drawn or partially-drawn comb responsible for the occasional appearance of sour or watery comb honey. I will presently endeavor to show how and when such are apt to occur. Let us create an occasion and a condition. Here is a strong colony of bees June 24, with one surplus super on. Honey is coming in fast. We go thru the bee-yard to see where surplus room is needed. We come to this colony and notice with regret that we are a week late. The super was put on with an inch starter of extra thin comb foundation. Now it is full of comb honey, one-fourth of which is capped—finished—ready to take off. We are prest with work. The super is lifted and an empty one added underneath. Next day this colony swarms, and it swarms again and again; but the hive is left standing undisturbed until we come around again on July 24. Ten to one, the honey is watery. It has an ashen-gray, bluish lead color with death perspiration standing in relief. For the same reason such comb honey will hardly ever be found after the swarming season is over and the bees have permanently settled. Such honey is put on the strongest and liveliest colony in the yard, or carried into the honey-room and set two or more feet above the floor, where a temperature of 90 degrees, Fahr., is maintained, artificially if necessary, and by letting the sunshine in full blast whenever it wants to. In a week or two it will be fair honey in the comb. I know of instances when it was reclaimed or resuscitated to represent fancy white comb honey.

We handle sections by the super or case. When the first super is filled, or nearly so, it is taken off, the unfinished sections taken out, and after being leveled with the uncapping knife, if any be bulging, returned to the colonies for completion.

In the fall, when the grand conglomerate sweepstakes of surplus is carried into the honey-room, the orthodox temperature as above must be maintained. The finished sections are placed six in a compartment of the super where formerly had been seven, making 24 to the super. Commencing well up from the floor, these are tiered with a piece of lath between every other one to give free circulation of air. The unfinished sections are assorted and piled up the same way. Those that are well filled and capt one-half and better, to the point from which they go as finished combs, are packed in regular shipping-cases, to-wit: Three sections long, six wide, two tiers high, 36 sections in all, and sold cheap at 8 cents a pound close at home. Two cases pay our road tax; one is given gratis to this neighbor, one to the other. The minister gets one free of charge, sure. All go like hot-cakes.

For two seasons I have used the Taylor handy (so-called) comb-leveler. To use it the honey must be extracted and the combs licked clean by the bees. Light your lamp. Put water in the trough around the melter. Wait half an hour till all is hot enough to start in. Place your comb on the leveler and wig-wag it. When melted down to the prescribed limit, lift off. With a case-knife scrape off propolis and wax quickly lest it might ignite. With a tiny penknife open the sealed air, as air can be readily artificially sealed in this manner. I have purposely and repeatedly left such sealed air-cells untouched, and put on the hives the following season when the bees left them the same; and I might have done a splendid business had air more weight. Beware lest a despairing sigh escape you; blow the moat dry, extinguish your lamp, etc., only to start fresh again.

All this is obsolete with me now. I do it no more. My first step in fixing the remainder of the unfinished comb is by taking three unfinished sections and the Bingham uncapping knife to the near-by village barber who hones it (the knife) to a razor edge. I now resolutely walk into the honey-room with the devout determination of doing a good chop. The aforesaid temperature is somewhat lowered to be more comfortable. A frame made of lath, unplanned and unpolished (because it so holds the sections better) is laid on the table. It holds six sections. The left hand picks up a section, and with the aforesaid knife is made one great cutting sweep to the left and one to the right and one side is uncapped and the comb cut down low so that when the other side has received a similar treatment it is about an inch thick. Sections go into the frame, the frames into the extractor, the honey into my ripening and clarifying tank. Here is where the 7-to-the-foot open-top section scores a big point. You can cut the comb down easily.

All the unfinished sections, whether or not they contain honey, are leveled. The tops of the cells that are propolized, even when low enough already, are shaved off. Propolized foundation is cut out entirely. The honey being all extracted from the sections, they are set out for the bees to lick clean and dry, so they can be stored away until the next season sees them on the hives again, to be filled by the bees and capt snow-white, to be shipped to market as fancy white comb honey.

JOHN TRIMBERGER.

A lengthy discussion followed, especially upon evaporating honey not ripened as it comes from the unfinished sections, and at times in extracting.

QUES.—Is all unsealed honey unripe honey?

Several replied no, especially that gathered in very dry weather, and often the fall-gathered also; that each bee-keeper should know at sight any honey that is ripened, and never take from the hive before such quality is secured.

A recess was taken to pay the annual dues, which was responded to by a large number, representing 14 counties in Wisconsin in attendance, and delegates from two other States.

Next was a paper by H. Lathrop, on

Producing Comb Honey Without Increase.

If your bee-cellar is not sweet, sprinkle a good coat of fresh lime on the floor. If the trouble is simply dampness, six or eight inches of dry oats-straw scattered on the floor will do much toward helping the matter. I have a bee-cellar that has a very moist, porous bottom; by using the straw as described, it has wintered very successfully for a number of years.

A certain bee-keeper has a chance to rent 35 colonies of bees from a farmer for next season. He wishes to run them for comb honey and take no increase; he will keep them where they now are on the owner's premises and bargain to leave the original number at the close of the season. How can he manage? There are several ways of procedure

in such cases; I will mention two, either of which will work. I should visit the apiary in the spring often enough to see that each colony, if possible, was gotten in shape for the honey harvest, by feeding any that needed it, by equalizing and by seeing that each colony was provided with a queen that could attend to her proper duties.

Now when the honey harvest begins, provide all with supers that are in shape to work in them. Very likely some of the colonies will not swarm at all if given surplus room at the proper time, but you will have some one on the ground often enough to attend to the swarming question in the way that I shall point out. When you find a colony preparing to swarm by having queen-cells well under way, take a sharp knife and cut out and remove about two-thirds of the brood, including all that has queen-cells started on it. The bees will go to work and build down the combs again, and swarming will be stopt, very likely, for the season, especially if they are well at work in the sections. The brood thus removed can be placed over weak colonies, if there are any, in almost any kind of box, and allowed to hatch and build up the colony, or you can take it home and feed it to the chickens, and put what they leave into the wax-kettle, so that nothing will be wasted. In this way you may take a good crop of honey and have no increase of colonies.

This may look like a rough and wasteful way, but it answers the question, and it will work. At the close of the season the bees are all right, and have their combs rebuilt, so what harm has been done by cutting out the brood? Of course such work is not recommended for novices—it requires one who has a practical knowledge of bee-keeping; but even if practiced by a novice it would often result in far better returns for the labor expended than what is gained by the old method of letting the bees swarm and swarm, furnishing hives to put the new swarms in, the result—a lot of weak colonies to die during the winter or coming spring, and no surplus honey, unless the season happens to be an extraordinarily good one.

The other plan, which I will briefly outline, requires more fixtures, but as I said of the first, it will work if properly carried out. Make some cheap shallow cases of common fencing, same width and length as the hive, put sticks in the top to correspond with the top-bars of the brood-frames. When a colony swarms remove the hive to one side with the entrance turned in the opposite direction; hive the swarm in the shallow case on the old stand; reduce the old hive as much as possible, by getting all field-bees into the temporary brood-chamber.

After a few days when they have gotten well started in building combs, you can give them the supers that were on the present hive, or you can do so at once by using a queen-excluding honey-board.

After the first day turn the old hive around and allow it to remain beside the other with the entrance the same way. On or before the seventh day you can weaken the old colony to prevent further swarming, by shaking off the young hatching bees from the combs and letting them run into the other, which is to be made the working colony. The temporary brood-chamber being small, the queen will occupy nearly the whole space with brood so that you will get nearly all the surplus honey in the sections. After the honey season has closed, all supers have been removed, and you wish to leave the original colonies as you found them, place the old hive back on the original stand, and on top of it place the temporary brood-chamber; leave it there until brood-rearing ceases, and all brood is hatched, then place a bee-escape under it, and when clear of bees take it away. It will be seen that when these two colonies are placed the one on top of the other, that there is a queen in each; one can be removed by the bee-keeper if he desires, otherwise the bees will do it. Almost any bee-keeper will know what to do with these shallow cases containing strips of comb and a very little honey. They can be saved entirely for the same purpose another year, or the honey and wax can be gotten out of them by the agency of heat.

Now, if any of my bee-keeping readers think they can furnish a better answer to the original question than the foregoing, I would be glad to have them do so, as I am here to learn as well as to furnish what information I can relative to the subject of bee-keeping.

H. LATHROP.

As Aug. Weiss was present, and making over 14,000 pounds per year of his comb foundation, and having samples of foundation and long rolls of sheeted wax with him, many questions on comb foundation were answered by him.

[Continued next week.]

QUESTIONS AND ANSWERS

CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

(The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.)

No Bee-Supplies for Sale.

Could you spare me a couple of queens now? If so, what kind are they, and what is your price? WISCONSIN.

ANSWER.—I don't keep anything in the line of bee-supplies for sale.

Albino Bees—Danzenbaker Hives.

1. Will albino bees give as good results as Italians?
2. Is the Danzenbaker hive a good one for the beginner?

CONNECTICUT.

ANSWERS.—1. Some albinos are better than some Italians, and some Italians are better than some albinos. Taken all in all, bee-keepers who work for honey seem to prefer Italians.

2. Depends something on the tastes of the beginner. For the majority it is perhaps not the best.

Bees Affected with Paralysis.

I have two or three colonies affected with paralysis, and can find but little advice in my books. What do you think of moving affected colonies, as fast as discovered, to some place away from the apiary? How far do you think it necessary to move them?

ALABAMA.

ANSWER.—I don't believe it would do any good. If the disease can be conveyed by having affected bees enter sound colonies, there would be no surer way to spread it than to move away the diseased colonies, for that would make the field-bees of the affected colonies enter the sound ones.

Colonies Deserting their Hives.

My bees swarm out and go into other hives, queen and all. I had 35 colonies, and eight of them came out and went with others. They did not rob, nor did they fight. I never saw this before. Some were good colonies. Can you give me any insight into this trouble?

MICHIGAN.

ANSWER.—The trouble you mention is not so very rare, but it is not an easy thing to say why a colony with clean combs, having plenty of brood and honey, deserts its hive for another. I've some times thought it was because the old bees had died off rapidly, leaving more brood in the hive than the bees could cover; but as a matter of fact, I don't know.

Foul Brood—Good Text-Books.

1. I am a young bee-keeper, tho an old man, and ready to acknowledge my ignorance about the business. One of the things I don't know is, what "foul brood" is. Will you kindly describe it so that a novice can detect it?

2. I would like some good work on bee-culture. Will you please indicate some work suitable for a novice in the business?

MICHIGAN.

ANSWERS.—1. Turn to page 161 of this Journal, and you will find an admirable reply from Hon. R. L. Taylor—"Foul Brood in a Nutshell." [Also on page 275 of this number you will find Prof. Cook tells something about it.—EDITOR.]

Root's "ABC of Bee-Culture," Dadant's "Revised Langstroth," and Cook's "Manual of the Apiary," are good text-books on bee-keeping.

Using Hives and Combs Left by Dead Colonies.

1. During the severe cold weather last winter, four of my colonies of bees on the summer stands died. My plan is to put their hives under some of my strong colonies, then about swarming-time move the top hive to a new stand and leave the bottom one on the old stand, and introduce a queen in the queenless hives. Will my plan work?

2. When will be the best time to put them under?

3. There is considerable honey in the hives of the colonies lost. Would you advise feeding after I put them under, or just let them

alone? My wish is to have as many good, strong colonies as I can by the time the honey-flow begins.

I wish to thank you for the answer to my last letter. Just as soon as I received the American Bee Journal and found your answer, it being a warm day, I went out and turned the hive upon the bottom-board, and began to rake out between the frames. The first thing I saw was Mr. Mouse running out. Then I saw the tail of a mouse on the bottom-bar of one of the frames. I pulled him out; he was dead, and so large that I had a hard time getting him out. I will look out for mice after this.

4. Will it be well for me to close the entrance of my hives some during cold days? I am using 8-frame dovetailed hives. ILL.

ANSWERS.—1. It may work all right, and it may not. Depends somewhat upon whether the colony is strong enough to work down into the lower story.

2. No matter how soon. It will do no harm to put them there right away, and will be the better for the combs.

3. With plenty of honey it isn't necessary to feed.

4. It would be a good deal of trouble to change the entrance daily to suit the weather, but it may be well to contract the entrance till warm weather comes.

Colony Destroying Eggs.

There is one of the most peculiar freaks now being indulged in by one colony of my bees, and I can't unravel the cause for such action. The bees destroy all the eggs transferred with combs from other colonies. It is quite strong with bees, and one of my best colonies of 1898, having a clipped queen, but commenced breeding quite early this season, and all hatch drone-bees, becoming a drone-layer. I have taken at different times frames from other colonies and inserted in the hive; the bees immediately destroy all eggs and even clean out the cells where hatched. I confess that I am unable to solve the mystery. OHIO.

ANSWER.—I don't know. I have noticed that it is a frequent thing when a colony becomes queenless, or when a frame of eggs is given to a queenless colony, for most of the eggs to be removed or eaten, but I don't know why. It has also been said that when breeding ceases in the fall, it is the work of the workers rather than the queen, for there is a cessation of hatching some time before the queen stops laying.

Division-Boards—T Supers, Etc.

1. Is a common, 8-frame dovetail hive, 12 $\frac{1}{2}$ inches wide, suitable for eight frames without a division-board? or would it space them too far apart? Do not a good many use them without division-boards?

2. Is it necessary to use any support for medium brood foundation in frames like yours, where it is firmly fastened at both top and bottom-bars?

3. In using T tins in the super, do you fill out at the ends with dummies?

MISSOURI.

ANSWERS.—1. Probably not many use dovetail hives without division-boards, for most of them have self-spacing frames, and it's rather necessary to have a division-board—more properly a dummy—to get out the first frame. But eight loose-hanging frames will work all right, the only difference being that the frames will be spaced 1 $\frac{1}{2}$ inches from center to center, a distance that some good authorities approve. But I would hardly advise loose-hanging frames.

2. Fastening at top and bottom will not do, for the foundation would stretch and bulge badly.

3. No, the T supers are shorter than the hives, and don't need anything to fill out the ends.



NO. 1—POETIC BEATITUDE.—Scribner's Mag. Advertiser.

GEORGE W. YORK, Editor.



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GEORGE W. YORK & COMPANY,

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ONE DOLLAR A YEAR.



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United States Bee-Keepers' Association.

Organized to advance the pursuit of Apiculture; to promote the interests of bee-keepers; to protect its members; to prevent the adulteration of honey; and to prosecute the dishonest honey-commission men.

Membership Fee—\$1.00 per Annum.

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GEN'L MANAGER AND TREASURER—Eugene Secor, Forest City, Iowa.

Place and Date of Next Meeting:

IN FRANKLIN INSTITUTE,
15 South 7th Street, between Market and Chestnut Sts., Philadelphia, Pa.,
September 5, 6 and 7, 1899. Every bee-keeper is invited.

VOL. 39.

MAY 4, 1899.

NO. 18.



NOTE—The American Bee Journal adopts the Orthography of the following Rule, recommended by the joint action of the American Philological Association and the Philological Society of England:—Change "d" or "ed" final to "t" when so pronounced, except when the "e" affects a preceding sound.

See that All Colonies Have Stores is the advice given in the *Progressive Bee-Keeper* by G. M. Doolittle, who prefers for that purpose combs of sealed honey, and next to that combs filled with feed, in either case these combs placed in the center of the brood-nest to stimulate the queen to greater laying.

Increasing the Association's Membership.—Mr. Herman F. Moore, secretary of the Chicago Bee-Keepers' Association, sends us the following suggestions looking toward an increase in the membership of the United States Bee-Keepers' Association:

MR. GEORGE W. YORK, Editor American Bee Journal.

Dear Sir:—I have a suggestion to make in regard to the United States Bee-Keepers' Association. Is there any reason why every bee-keepers' association in America should not be affiliated with the national organization? Why can't we say to the Philadelphia association, "Join us as a body, and your first year's dues will be only 50 cents a member?"

In the first place, we would get the addresses of all the bee-keepers who are members of any bee-keepers' organization, and interest them specifically in our work. In the second place, we should no doubt largely add to our membership list, for it is quite an inducement to get in for half-price. The local associations could vote the money out of the treasury, and levy a tax on their members to pay it.

There might be an association membership fee of \$5.00 or \$10 a year. Of course, certain benefits should be conferred for the consideration of such membership. An asso-

ciation should be entitled to one delegate to the annual meeting of the United States Bee-Keepers' Association for each 10 or 25 members of the local affiliated association.

A prize of \$10 might be given to the local association sending in the largest list of new members.

It seems as if considerable advance might be made along the line mentioned, and perhaps more elaborated. I hope this will be taken up and discussed generally by bee-keepers in the various journals.

As to the proposed union of the two big associations, let some one hunt up the names and addresses of all those who are members of both (and I suppose favor amalgamation), and let them correspond with each other regularly until the desired result is brought about.

HERMAN F. MOORE.

Some years ago an effort was made to get local bee-keepers' organizations to affiliate with the National, but only a very few of them seemed to think enough of the matter to thus become affiliated. But perhaps circumstances are different now, and something might be accomplished along the lines indicated by Mr. Moore.

We would further suggest that Mr. Moore's ideas be considered at the Philadelphia convention, next September, as no definite action can be taken before that time. It might be well, however, to discuss the subject in advance of the meeting, so that various opinions might be thoroughly understood and be given due attention when the time comes for final decision.

Cuban Bee-Keeping is not very encouragingly spoken of by "An American Tramp" in *Gleanings*. He says the wages paid to bee-keepers are from \$15 to \$25 per month and board. The houses in the country have been burned down, and those in town are so filthy that no woman from a comfortable home in this country would be content to live in them. Fleas are so bad that he says he had to wash himself with kerosene oil to get any rest, said oil costing 50 cents to \$1.00 a gallon. Whisky and cigars are cheap, other necessities (?) high.

We are inclined to agree with Editor Root in his views as expressed in the following comment on the article by "An American Tramp":

"I have concluded not to go to Cuba just yet. If I must bathe myself in coal-oil at \$1.00 per gallon to keep off fleas I'll stay at home awhile longer. Seriously, one should think twice before going to this land devastated by the hand of war. Conditions will improve, no doubt, in the near future. In the meantime the average bee-keeper better keep his good dollars and invest them at home."

The American Bee-Keeper for April contains this editorial paragraph:

"From a recent letter written by Mr. Craycraft, of Cuba, the following interesting notes were gleaned: There are six or eight apiaries of importance in the vicinity of Havana, aggregating perhaps 1,600 to 1,800 colonies. There is still some foul brood in that locality. The apiary formerly owned by Mr. Osburn is now in the hands of a Cuban. A Mr. Ravelo, having about 400 colonies eight miles south of Havana, had, on Feb. 10, taken something over 3,000 gallons of honey this season. It is Mr. Craycraft's opinion that Cuba produces the finest grade of honey in the world, and that some enterprising person or firm is needed to bring it before the world. Mr. Craycraft takes a very cheerful view of Cuba's apicultural future."

Spraying Fruit-Trees in Bloom.—It is very encouraging to see that fruit-men are beginning to understand more fully that bees are their friends, and to deprecate the practice of spraying fruit-trees when in bloom. The following appears in the *National Stockman and Farmer*, not in the apicultural but in the horticultural department:

A correspondent in Franklin, Pa., writes: "I think it is unlawful to spray fruit-trees while they are in bloom with poisonous mixtures of paris green, etc., and it would be well to call attention to the matter in your valuable paper. Some

farmers spray when the trees are in bloom, and thus destroy many bees, which is certainly wrong."

REMARKS:—There is probably no law on the subject in some of the States, and yet there should be. No thoughtful person, even tho he has no bees of his own, would be willing to injure those of his neighbors; but some people are not as careful as they should be.

The time to spray is, first, before the buds expand, and, second, after the bloom has fallen off. Subsequent sprayings may be necessary, according to the judgment of the orchardist, but there is no need to spray while the trees are in blossom. The bees are among the best friends of the fruit-grower, carrying pollen from one flower to another, and from one tree to another, and any one who raises fruit—of any kind—will find it to his advantage to keep bees, even without taking the honey into account.

It would be a splendid thing for both fruit-grower and bee-keeper if all the farm papers would stand with the able National Stockman and Farmer in this matter. Of course it takes time to educate the public, but it can be done if persisted in by those who know the facts and can spread them among the people.

Advertising Bees and Queens.—Owing to the quite severe and general loss of bees the past winter, there will likely be a good demand for bees and queens. In view of this, we would suggest that those who will have any for sale cannot do a better thing than to offer them thru an advertisement in the American Bee Journal. Our rates are very low, considering the quality and quantity of our weekly circulation. Send for rates on advertising if you are interested in the suggestion we have made.

Also, all dealers in bee-keepers' supplies will find it to their interest to keep their advertisements standing in our columns. The G. B. Lewis Co. now are using a half-page of space; the A. I. Root Co. a third of a page; and many others who do any business realize that if they want to reach bee-keepers they must use space in a paper that goes to the people they want to induce to become their regular customers. Those dealers who have tried it say that the old American Bee Journal draws business their way. It would be glad to help turn some your way, too, if you want it to do so, and if you are not already among its list of reliable advertisers, and deserve to be found there.

York's Honey Almanac is a neat little 32-page pamphlet especially gotten up with a view to create a demand for honey among should-be consumers. Aside from the Almanac pages, the forepart of the pamphlet was written by Dr. C. C. Miller, and is devoted to general information concerning honey. The latter part consists of recipes for use in cooking and as a medicine. It will be found to be a very effective helper in working up a home market for honey. We furnish them, postpaid, at these prices: A sample for a stamp; 25 copies for 50 cents; 50 for 70 cents; 100 for \$1.25; 250 for \$2.75; 500 for \$4.50. For 25 cents extra we will print your name and address on the front page, when ordering 100 or more copies at these prices.



No. 2—ANOTHER POETIC BEE-ATTITUDE.—Scrib. Mag. Adv.



EDITOR HILL, of the American Bee-Keeper, says: "Why not begin the season right by adopting some good record system? One year's experience will convince those who have not tried it, of its advantages."

THE DREXEL POULTRY-YARDS advertised on page 283 of this issue, are owned by a personal friend of the Editor of the American Bee Journal. He will give entire satisfaction to all who extend to him their patronage. If you are interested, give him a trial order, not forgetting to mention having seen the advertisement in the Bee Journal.

A LANGSTROTH MONUMENT SUGGESTION comes from the Island of Jamaica, as follows:

"Mr. Secor, on page 200, asks for approval or otherwise of the inscription for Father Langstroth's memorial. Having subscribed our mite, allow us to suggest that the wording remain as it is, only arrange it so that it will represent a Langstroth frame; or have the words engraved on a Langstroth frame in relief. In some way the movable frame should be shown, and not less than \$500 spent on the shaft.—JAMAICA."

GENERAL MANAGER THOMAS G. NEWMAN, of the National Bee-Keepers' Union, writing us April 24, said:

EDITOR AMERICAN BEE JOURNAL:—On page 248, it is stated that I have made "demands" as a condition of amalgamation of the two Unions, and that these are never likely to be assented to by General Manager Secor, and that there the matter rests, etc. This is news to me. I have never made any "demands" in that line, and call for the proof.

Yours truly,

THOMAS G. NEWMAN,
General Manager.

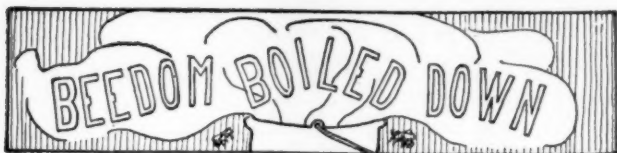
We think perhaps Mr. Newman has taken Mr. Abbott's words, as given on page 248, a little too seriously. We do not know to what he (Mr. A.) referred, but are certain that whatever it was, it must have been only a mere difference of opinion, and likely the word "demand" was not the proper one to use, as we do not know that Mr. Newman has demanded anything lately in regard to amalgamation. Still, we haven't much doubt that before a uniting of forces could be consummated he would require certain conditions ere he would advise the Union to go in with the Association. But we don't believe any further public discussion of this matter is either necessary or desirable.

MR. FRANK BOOMHOWER, of Schoharie Co., N. Y., is suggested as State inspector of apiaries by Mr. P. W. Stahlman, of that county, in the following, dated April 22:

EDITOR YORK:—I notice on page 248, that the proposed Foul Brood Bill has become a law in New York, and I endorse the words that Mr. H. S. Howe expresses, viz.: That its success will depend upon the man who may be appointed inspector. I think that Mr. Frank Boomhower, of Schoharie County, would be the man for the position. He has been inspector for two years in his county, and has done good work. (See his article in Gleanings of Sept. 15, 1898, page 691.) He is a man of 26 years' experience in the bee-business and has had much experience with foul brood. He attends strictly to his duties, and is very particular in all his work about bees. He knows what he is doing, and has the "git" to push things right thru. I know of no better man in New York for the place.

P. W. STAHLMAN.

On another page of this number will be found an article by Mr. Boomhower, in which he gives a sample of the experiences he has in his work as inspector. In the case cited he evidently exhibited great bravery; and if he can handle the disease known as foul brood as diplomatically and successfully as he did his feminine enemy, we think that he possesses qualifications that ought to recommend him very highly for the position. But personally we know nothing of the candidates for the inspectorship in New York—neither as to the men themselves, nor their special fitness for the position.



To Preserve the Aroma of Honey, according to a discussion reported in Canadian Bee Journal, it is important to seal it up as soon as possible. Any exposure to the air, unless for the sake of further evaporation, is a damage to the quality of the honey.

For Spring Feeding, Bee-Chat advises to let weak colonies alone, feeding only the strong colonies with syrup, and taking filled combs from these strong colonies for the weaker ones. Provident bee-keepers may do still better to have on hand a stock of combs of sealed honey, so no syrup need be fed.

Travel-Stain.—J. E. Crane reports that where old comb had been cut down and the bees had built out new, the part nearest the old comb was darkest, and the color changed to nearly or quite white at the edge farthest from the old comb. Also that the cappings in an extracting-super were dark if young bees had been reared in the comb, but white in combs that had not been used for brood-rearing.—Gleanings.

Sun or Shade for Wintering.—The editor of Schweiz. Bztg. found, as the result of observation, that a colony standing in a sunny place, on account of more frequent flights, consumed three to four pounds more from Nov. 1 to Feb. 1, and also had more dead bees than one in a shady place. That leaves it still possible, however, that in other localities the shady place might be the worse of the two. At least if the place is so shady that bees are confined too long.

Quinby's Idea of Size of Hives.—F. L. Thompson has been doing some figuring in the Progressive Bee-Keeper. Quinby's 2,000 cubic inches for a box-hive is by no means

the same as that amount of space in the body of a frame hive, for in the latter case a lot of room is taken up with the wood of the frames and the surrounding spaces. A 10-frame Langstroth would about suit Quinby's idea, as the space inside the frames is 2,100 cubic inches. An 8-frame hive has only about 1,670 cubic inches inside the frames.

Scholz (or "Good") Candy.—To make this candy, G. M. Doolittle thoroughly warms good powdered sugar by setting it near the stove four to six hours, then good, thick, wholesome extracted honey is warmed till it feels quite warm to the hand; the sugar is stirred in till it can be worked by the hands, when enough of the sugar is kneaded in till the loaf will stand up without flattening down when placed on a flat surface. It is now set away in a warm room for a week or so, when it is ready for use; but if the weather is warm, or the queens are to go to a warmer climate, about $\frac{1}{2}$ of the bulk of the candy must be kneaded in of fine *granulated* sugar, when it will not run, even at 100°.—Gleanings.

Wintering Bees in Colorado.—F. L. Thompson reports, in the Progressive Bee-Keeper, some points brought out in a discussion of Colorado bee-keepers. Single-walled hives are chiefly used, but chaff-hives or cellaring might pay well in saving bees and honey, if properly managed. He says:

"But chaff-hives should be painted a dark color, not have propolized or sealed cloths between the frames and top packing, not have too thick walls, an inch or two being sufficient between outer and inner walls, and should be examined at the conclusion of cold spells to make sure that the top packing continues dry; if not, it should be aired as soon as the weather is warm enough. One member reported that for three years in succession he had made tests of chaff-hives on a large scale with single-walled hives sitting along side, and every year found that the colonies in chaff-hives had enough more honey to pay for the hives. Another said he always had to remove honey in the spring from his chaff-hives, to make room for the brood; and that his cellar-wintered colonies consumed five or six pounds during the winter, while the others averaged 20. Another said that bees in his thick-walled chaff-hives, painted white, with the same quilts they had in summer, and left to themselves in winter, invariably wintered very poorly."

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GENERAL ITEMS

A Long, Severe Winter.

My bees nearly all died during the past long winter. I think it was the longest and coldest winter I ever past thru. The first heavy snow here fell Oct. 13, about one foot deep where not drifted, and it did not lie long except where drifted, but it soon turned cold, and has been a very long, severe winter, the most so of any winter here known to the oldest inhabitant. I had 26 colonies of bees last fall, and now have just four. I am allowing them to build up on the honey left by dead colonies, taking off the covers and setting out from the live bees, some distance, and now think it is a wise Providence, as I could not attend to so many without help or overwork.

GEORGE McCULLOUGH.

Page Co., Iowa, April 13.

"Adel" Means "Noble."

On page 235, Henry Alley gives his explanation for the adel bees. He says, "adel means superior." If I am right, adel signifies noble, and adeliger means nobility. Adel is a German word and means something with a pedigree; Adeliger, meaning nobleman, is, to my mind, not superior to other people as man, tho he may be in his class in a far away land.

Bees are flying every day now, and doing well.

ALBERT WILTZ.

Atchison Co., Kan., April 16.

Weak Colonies—Little Clover.

Bees are working very hard now, bringing in pollen, but we have very many very weak colonies. Mr. Axtell says there is but little white clover left in this neighborhood.

Mrs L. C. AXTELL.

Warren Co., Ill., April 26.

A Rather Gloomy Outlook.

The outlook is gloomy. Bees, as far as I know, are gone from the smaller keepers. The larger ones have suffered, while beekeepers of my type don't know yet how they do stand. I have 80 dead colonies, and the next 20 days will demonstrate what small colonies will do in maintaining their identity after a winter with no warm days in March.

Yesterday my bees had their first flight since the warm days in February, and it was so cool yesterday that none took wing till the afternoon, and then only for two hours. Of course, we are up in the clouds—1,200 feet above the ocean—and don't have warm days. All days are clear and bright here. We have little but sunshine; neither snow nor rain or clouds to compare with the southern part of the State. It is uniformly cool, and this March it was colder—a week near zero all the time, and 28 to 30 degrees below two mornings—10 degrees colder than for four years. I will write again after finding how things turn.

T. F. BINGHAM.

Clare Co., Mich., April 11.

Bees and Sorghum-Making.

In regard to the question of keeping bees and running a sorghum mill, my experience is much on the same line as that of Andrew Carlson, on page 109. I have worked the two together for eight years. My bees are about the same distance from the mill, but a neighbor keeps bees within three rods of the mill. The bees give no trouble as long as there are flowers to gather nectar from, but after a frost, followed by warm days, they come in large numbers, but we could control them with smoke. But last season was a beater. The summer was a poor one for honey, the flowers prac-

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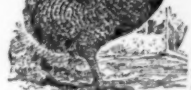
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tically closing by June 20, and the bees
were idle until sorghum-making com-
menced, which was Aug. 29.

The second day they began to come in
swarms, and seemed to be perfectly wild
after the sweet; they were into everything
where there was juice or syrup unless
tightly covered, smoke having no effect
unless so dense that the hands could not
work in it. They would fly into the steam,
causing them to drop into the boiling
juice. The juice-tanks would be covered
with drowned bees.

At the mill they were the worst; some
days they came in such swarms that I was
compelled to saturate cobs with coal-oil, set
fire and burn the bees. I confess it made
my heart ache to destroy them when they
were trying so hard to supply themselves
with food.

Now as to the effect on the colony at the
hive: I believe it is quite a benefit, as it
stimulates the queen to laying and brood-
rearing, thereby having a good supply of
young bees to winter, for those that are
destroyed are old workers, and would die
before spring, and the sweet they store is
all used before winter by the young brood,
as I have found none in the cells when I
prepare them for the winter, which is the
last of November.

The loss of bees this winter from starving
and freezing is heavy—from $\frac{1}{4}$ to $\frac{1}{2}$. Very
few use chaff-hives, and none winter in
cellars.

ORION CONGER.
Shelby Co., Ind., March 29.

Hard Winter for Bees.

I have my bees—about 100 colonies—in
the cellar yet, having lost a few during the
winter. This has been a hard winter for
the bees, in this location, on account of cold
weather. A great many have lost all their
bees. SAM SEVERSON.

Clark Co., Wis., April 7.

Bees Building Up Well.

Bees that pulled thru the past winter are
building up finely. Fruit is just blooming,
and alfalfa is growing well. Otero County
did not lose as large a percentage of bees as
most places report. F. W. CHAK.

Otero Co., Colo., April 25.

Visit to Louisiana—Lost None.

Last January I ran down to Louisiana on
a visit to my old home, 48 miles north of
New Orleans. I spent two days with my
nephew, Edwin R. Wells, who has a very
pretty home just a half mile west of town.
The "queen" of this home, an intelligent
and womanly little woman, and four or
five children, make Mr. Wells one of the
happiest of men. He is engaged in straw-
berry and vegetable growing, and bee-
keeping. His vegetables and berries are
shipped to Chicago, and net him quite hand-
somely. The product of his apiary, he told
me, he could not so easily dispose of. His
bees did very well the past season, storing
a good surplus. There was served on his
table, while I was there, some finely-
flavored extracted honey of a light straw
color. It was quite thick, but it never
granulates. I was unable to ascertain
whence the nectar was taken by the bees.
He had Italianized his apiary about three
years ago, but there being so many black
bees in the forest and in neighboring colonies
he was unable to keep his stock pure.
One of the greatest predators on his api-
ary is an immense dragon-fly that comes
during the spring and summer, just before
sunset, and waylays the homeward-bound,
heavily-laden little bees, and devours them
with ravenous appetite.

Mr. Wells has promised to write me a list
of the nectar-producing plants of that re-
gion, together with some of his experiences
in a Louisiana apiary, which I may give to
the readers of the Bee Journal, if consid-
ered worthy of interest.

Our bees here are in good condition, and
out of 11 colonies, packed last autumn, we
have lost none. I happened to be busy

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the old house, to whom I wish to extend my
thanks, to continue their patronage with Mr.
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MRS. ANNIE MUTH (Widow.)
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cribbing a large crop of corn at the time the bees needed fixing for winter, so Mrs. Durbin gave them her attention, and without assistance from any one arranged them so comfortably that they past safely thru our unusually severe winter, with the mercury running down to 28 degrees below zero. They are on the summer stands. It is too early to prognosticate for the coming season.

Wm. J. DURBIN.
Fayette Co., Ind., April 12.

Substitutes for Pollen.

We would like to exchange some rain for sunshine just now. Our bees are not getting any pollen, and have not been for about three weeks, consequently they are not rearing any bees. So we fear they will not be in condition to make the best of the honey-flow which we usually have in May, from poplar, willow, black locust, blackberries and dewberries.

Dr. Miller recommends giving bees a mixture of oats and cornmeal, and from reading bee-books and papers I have been led to believe that flour, meal, and such mixtures could and would be used as a substitute for pollen. So with the idea untested, I have been giving my bees corn and oatmeal mixt. I also put flour where they could get it. They seem to like flour the best. I will add that this is the first time I ever noticed that bees could not get all the pollen they needed.

I would like to ask Dr. Miller or any of those who have been telling beginners to feed corn and oatmeal, flour, etc., what good does such stuff do the bees? It certainly is no good as a substitute for pollen, or larva food, for I have several colonies at this date in which there are from one to three Langstroth frames filled with eggs, and have been for the last 15 days, and yet there are no young bees in any of the combs. This rather puzzled me, and I took some of the combs of eggs out and gave empty combs, and the queen would at once fill them with eggs.

One might think it would not be taken by them unless it could be valuable in some way, but such proof is not worth much, for they will take fruit-juice, sorghum or almost anything that is the least bit sweet, in times of scarcity, yet almost any bee-keeper of experience can tell you that bees will not thrive on them. I do not know of any good it can be to them, unless the old bees use it as food, and I am not sure they would not be better off without it.

My bees have carried several pounds of meal and flour into their hives without any apparent benefit. So if there is any good in feeding corn and oatmeal, flour, etc., let's know what it is.

C. PRESSWOOD.
Bradley Co., Tenn., April 11.

Albino Bees—Loss of Bees.

EDITOR YORK:—I see several are asking for a description of the albino bees. By this mail I send you a cage of my albinos. You rather intimate they are lacking in vigor, or color-matter, which would convey the impression that they are an inferior race or strain. I have had this strain of bees for the last six years, and in the past 12 years I have had queens of every and all the different strains and races now in the United States, except the Punics; I have had queens from nearly all the prominent breeders in the Union and Canada; and I consider, taking all points, the albinos the superiors of the whole lot. Because their hair is white I can't see why that should lessen their vitality.

I now have an old white mule which my father bought when I was a boy. He (the mule) is now 29 years old, and the past winter he helped to plow 80 acres of land for corn, and is far better than many black, sorrel, and bay mules I know. Surely, his white hair has not lessened his vitality.

Because the albinos have white hairs on their abdomen, and rather a bluish hair around their shoulders and head, I can't see why that should weaken their constitution; and as the regular Italians have a

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F. J. GUNZEL, Obeas, Craighead Co., Ark.
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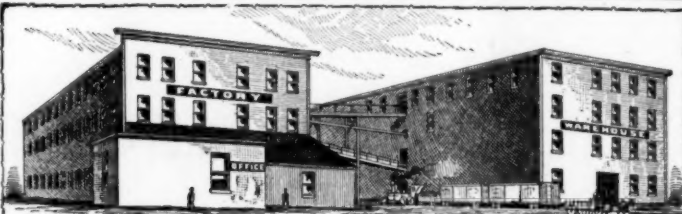
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faded yellow or dirty brown hair, why this color should make them more hardy.

The general report is that more bees were lost the past winter in Texas than was ever known before. I wintered 100 full colonies and several 4-frame nuclei without the loss of one, all on the summer stands and no protection whatever, altho the weather took a tumble in February from 70° above to 10° below zero in 24 hours. J. D. GIVENS.

Dallas Co., Tex., April 17.

[The bees were received and are nice in appearance. A thoro trial, such as Mr. Givens has given the albinos, ought to have some weight. We have no doubt that they are good bees, but certainly no better than some others because they have a sort of whitish hair on their bodies.—EDITOR]

Convention Notices.

Illinois.—The Northern Illinois Bee-Keepers' Association will hold two sessions of its spring meeting, one at Mr. John Wagner's, near Benna Vista, Stephenson Co., under the supervision of the Vice-President; and one at Mr. Oliver Taylor's, at Harlem, Winnebago Co., in charge of the President, on Tuesday, May 16, 1899. Every one is cordially invited. B. KENNEDY, Sec. New Milford, Ill.

Texas.—The Central Texas Bee-Keepers' Association will meet at Milano, Tex., July 20 and 21, 1899. All are cordially invited to attend. H. H. HYDE, Asst. Sec. and Treas. Hutto, Texas.

Colorado.—A joint meeting of the Colorado State Bee-Keepers' Association and the Denver Bee-Keepers' Association, will be held in room 33, second floor of the Capitol Building, in Denver, Wednesday, May 10, at 10 a.m. Amendments of the Constitution and By-Laws, and other important matters, will be brought up. FRANK RAUCHFUSS, Sec. Denver, Colo. (box 378).

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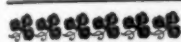
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HONEY AND BEESWAX

MARKET QUOTATIONS.

CHICAGO, April 18.—Best grades of white, 13c; off in color, etc., 11@12c; light amber, 10@11c; dark amber and mixt buckwheat, 7@9c. Extracted, clover, 8c; other grades of white, 7@7 1/2c; ambers and dark, 6@7c. Beeswax, 27c.

Sales are in a small way, as the time of year is with us which usually sees the close of active sales. Owing to the inclement weather which has cut off the early fruits and vegetables the honey market has benefited, so that all of the white comb is nearly disposed of. There is quite a quantity of dark and undesirable comb being offered.

R. A. BURNETT & Co.

DETROIT, April 10.—Fancy white, 12c; No. 1, 10@11c; dark and amber, 8@9c. Extracted in fair demand without change in price. Beeswax, 25@26 1/2.

Decreasing demand and the attempt to crowd sales have forced down prices on comb honey.

M. H. HUNT.

NEW YORK, April 19.—Fancy white, 12c; No. 1 white, 10@11c; amber, 9c; buckwheat, 7@7 1/2c. Extracted in good demand at unchanged prices. Beeswax quiet at 27c.

Our market is well cleaned up on comb honey. There is a fair demand, especially for white.

HILDRETH BROS. & SEGELKEN.

SAN FRANCISCO, April 5.—White comb, 10@10 1/2c; amber, 7 1/2@9c. Extracted, white, 7 1/2@7 3/4c; light amber, 6 1/2@7c. Beeswax, 26 1/2@27c.

Beyond a small jobbing trade, mainly out of supplies in second hands, there is nothing to record in the way of business. There are only moderate supplies, and these are mainly comb. Values are steady. It is too early to get definite information concerning coming crop, but it is not likely to prove large in this State.

BOSTON, April 18.—Fancy white, 13c; No. 1, 11@12c; A No. 1, 10@11c; light amber, 9c. Extracted, stocks about cleaned up. Nominal price for white, 8c; for light amber, 7c. Beeswax, very light stocks; selling at 27@28c.

Naturally the demand for honey is gradually growing less, and altho stocks on hand are not large, still the demand is so small that the general feeling is weak and prices are being shaded in order to work off stocks.

BLAKE, SCOTT & LEE.

KANSAS CITY, April 6.—Fancy white comb honey continues in good demand at 13 1/2@14c; choice white at 12 1/2@13c; dark, 10 1/2@11 1/2c. Extracted scarce at 6 1/2c.

PEYCKE BROS.

CLEVELAND, March 9.—Fancy white, 13@14c; No. 1 white, 12@13c; A No. 1 amber, 10@11c; No. 2 amber, 9@10c; buckwheat, 8c. Extracted, white, 7c; amber, 6c; buckwheat, 5c.

A. B. WILLIAMS & Co.

BUFFALO, April 21.—Our market is cleaned up on fancy comb; more would bring about 12 cts. There are more or less very poor lots selling at 7@8 cents, at which quite a large amount can be sold. Extra fancy beeswax, 28@30c.

BATTERSON & Co.

OMAHA, April 18.—There is but little stock left in dealers' hands now, and realizing that no further receipts can be expected until another crop gets into the market, it is held firm at 14c for fancy white comb. Extracted, 7 1/2c.

PEYCKE BROS.

MILWAUKEE, March 2.—Fancy 1-lb. sections, 13@14c; A No. 1, 12@12 1/2c; No. 1, 11@12c; dark or amber or old, 7@10c. Extracted, in barrels or kegs, white, 7@7 1/2c; dark, 5 1/2@6 1/2c. Beeswax, 25@27c.

Since our last report we have had a very good market for honey, and the demand has been very good for all grades, especially for sections of the best quality, and the demand is good now and small supply. We encourage shipments of best comb. Extracted, fair demand.

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We have arranged with a bee-keeper in Lee Co., Ill., about 100 miles west of Chicago, to fill orders for 3-frame Nuclei of Italian Bees, with Queens, at \$2.75 each, or in lots of 5 Nuclei, with Queens, at \$2.50 each. Orders can be filled about May 10 and after.

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